ABSTRACT OF THE DISCLOSURE

An alternate method of designing and manufacturing a semiconductor pressure sensor inherently allows for significantly improved sensitivity, thereby allowing miniaturization of the sensor. As a result, the design lends itself to arranging the pressure sensors using this method in a two dimensional array, and measuring pressure distributions with very high lateral resolution. Furthermore, the design eliminates some of the processing complexities associated with the designs taught in the prior art, specifically those related to processes for manufacturing the plates of the parallel plate capacitor, or the piezoresistive strain elements. The invention allows the manufacture a two dimensional array of pressure sensors with very fine lateral resolution, which provides a much improved means over the prior art of recording fingerprints and the like. Used in conjunction with processing electronics and software that are well known, this method can be used as a means of personal verification, identification and detection. An additional significant benefit of this invention is that the MR device can be used as a temperature sensor or as a magnetic field sensor in this configuration.